

REMARKS

The present application includes pending claims 50-58 with claim 50 being the only independent claim. Claims 1-49 and 59-66 have been previously cancelled or are cancelled herein.

In the Office Action, claims 57 and 59-66 were rejected under 35 U.S.C. Section 112, first paragraph. Claims 50-56 and 58 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over U.S. Statutory Invention Registration H1745 to Paraschac in view of U.S. Patent No. 6,126,658 to Baker or, alternatively, such claims were rejected under Section 103(a) as being unpatentable over U.S. Patent 5,688,270 to Yates in view of Baker. Claims 57 and 59-66 were rejected under Section 103(a) as being unpatentable over Paraschac and Baker further combined with U.S. Patent Publication 2003/0073991 to Francischelli or with U.S. Patent No. 6,096,037 to Mulier. Alternatively, claims 57 and 59-66 were rejected under Section 103(a) as being unpatentable over Yates and Baker further combined with Francischelli or with Mulier.

In response to the Office Action, claim 50 has been amended to better define the invention and it is respectfully submitted that claim 50 and its respective dependent claims are allowable. As to the rejection of claims 59-66, that rejection is now moot because claims 59-66 have been cancelled without prejudice. Reconsideration and allowance of the remaining claims is respectfully requested.

Amended claim 50 is generally directed to a cardiac tissue ablation apparatus. The apparatus comprises first and second jaws which are relatively movable between open and closed positions, respectively, to receive and compress cardiac tissue therebetween. Each jaw has a clamping surface with a width and an elongated

electrically conductive member for ablating tissue between the jaws. The conductive members of the jaws are in face-to-face relation and connectible to a bipolar energy power source so as to be of opposite polarity when so connected for providing an electrical current through tissue between the jaws. Each conductive member has a tissue contacting portion which has a width that is less than the width of the clamping surface of its associated jaw. As further recited in claim 50, the apparatus comprises at least one temperature sensor associated with at least one jaw. Such temperature sensor is disposed to sense the temperature of cardiac tissue at a location laterally spaced from the tissue contacting portions of the conductive members. Dependent claims 51-58 depend directly from claim 50 and are directed to additional features of the claimed ablation apparatus.

**The Cited References Do Not Teach
or Suggest The Claimed Apparatus**

The Examiner relies upon the combination of the temperature sensors in Baker with either of the structures disclosed in Paraschac or Yates to reject independent claim 50. However, it is respectfully submitted that such combinations do not teach or suggest the claimed invention.

In particular, Figs. 3A-3B of Baker disclose an apparatus for sealing tubular vessels of organs having upper and lower jaws 30A, 30B. In Figs. 3A-3B, the lower jaw 30B includes two channeling electrodes 55A, 55B that are proximate to one another and "are arranged at any suitable position between the left and right active bi-polar electrodes" 50A, 50B that are disposed the upper jaw 30A. The channeling electrodes 55a, 55B thus conduct electrical current between the active electrodes 50A, 50B (Column 8, lines 2-4).

Relative to the combination of the cited references with Baker, the Examiner relies upon two temperature sensors 72A, 72B, disposed on the upper jaw 30A, as shown in Fig. 5 of Baker. However, such temperature sensors 72A, 72B are disposed, respectively, on surfaces 45A, 45B which are directly opposed to the channeling electrodes 55A, 55B that conduct electrical current between the active electrodes 50A, 50B. Clearly, the temperature sensors 72A, 72B of Baker are not disposed to sense the temperature of cardiac tissue at a location laterally spaced from the tissue contacting portions of the conductive members but, in contrast to claim 50, to measure “temperature of tissue adjacent to the active electrodes during a vessel welding operation.” (Column 8, lines 10-12).

Baker further lacks any teaching or suggestion to modify the location of the temperature sensors 72A, 72B. Baker teaches offset electrodes 50A, 50B, 55A, 55B that conduct electrical current across a treatment zone that essentially spans the entire width of the jaw for welding and sealing tissue. The temperature sensors 72A, 72B in Baker are clearly disposed to sense temperature within the electrically conductive treatment zone created by such offset electrodes, in contrast to the claimed invention, and, in fact, are disposed in facing relation to the channeling electrodes 55A, 55B.

It is therefore clear that Baker is fundamentally different from the claimed invention, which provides face-to-face conductive members and at least one temperature sensor that is disposed to sense temperature of tissue at a location laterally spaced from the tissue contacting portion of the conductive members. As set forth in the specification, the temperature sensor permits “the user to avoid undesired thermal spread” outside of the line of ablation that is formed in cardiac tissue.

(Paragraphs 112 and 156, last four lines of each). For example, in Fig. 32 of the present application, a thermocouple 102 is shown and described on a jaw 78 remote from the electrodes 94, 96 near the edge of the jaw 78. Such thermocouple 102 provides for sensing of thermal spread in the tissue clamped between the jaws 78, 80 outside of a line of ablation created by the electrodes.

For these reasons, it is respectfully submitted that the subject matter of amended claim 50 would not have been obvious in view of Baker either alone or in combination with any of the other cited references.

Further, it is respectfully submitted that the cited references do not teach or suggest the claimed invention for other reasons. First, the cited references to Paraschac, Yates and Baker are each directed to apparatuses for coagulation, cutting, welding or sealing of tissue, and not for ablation.

Each disclosed apparatus teaches a structure that is distinctly different from the claimed ablation apparatus. The claimed ablation apparatus provides for an electrical current through tissue between the jaws only to the extent necessary to form scar tissue to disrupt or break the pathway of an aberrant electrical impulse of the cardiac tissue without causing undue damage to cardiac tissue that may result from cutting, coagulation, sealing or welding such tissue. Accordingly, for this additional reason, reconsideration and allowance of the pending claims is respectfully requested.

Further, the cited references are substantially different for another reason. Such references teach and suggest a relative wide treatment zone that effectively spans the width of the jaw's clamping surface. For example, Baker teaches applying a current between the active and channeling electrodes 50A, 50B, 55A, 55B to effectively create

a treatment zone that essentially extends along the entire width of the jaws to seal or weld together the opposing walls of a target vessel. (Column 9, lines 27-47). In addition, it is respectfully noted that both Paraschac and Yates also teach a treatment zone that effectively spans the entire width of the jaws for cauterizing a wide area of tissue prior to cutting to reduce bleeding.

These apparatuses are substantially different from the claimed ablation apparatus which employs a tissue contacting portion of an electrode having a width that is less than the width of the clamping surface so as to create a relatively narrow line of ablation. Accordingly, for all the above reasons, it is respectfully submitted that the amended claims should be allowed.

Dependent Claim 57 Complies With Section 112, First Paragraph

Claim 57 is respectfully believed to comply with Section 112, first paragraph. The Office Action appears to impose a requirement that all the claimed features be shown in the same embodiment.

The Federal Circuit has made clear it is improper to "import limitations into claims from examples or embodiments appearing only in a patent's written description, even when a specification describes very specific embodiments of the invention or even describes only a single embodiment, unless the specification makes clear that 'the patentee . . . intends for the claims and the embodiments in the specification to be strictly coextensive.'" JVW Enters. v. Interact Accessories, Inc., 424 F.3d 1324, 1335 (Fed. Cir. 2005), citing Phillips v. AWH Corp., 415 F.3d 1303, 1323 (Fed. Cir. 2005) (en banc).

In the present application, it is clear that the specification does not intend for the claims and the embodiments to be "coextensive." The subject matter of dependent claim 57 includes that at least one of the conductive members defines an interior lumen. Such feature is disclosed in an embodiment of the present invention which is described and shown at paragraphs 23 and 97 and in Fig. 6 of the published application. Although Fig. 6 does not describe or show the claimed temperature sensor of independent claim 50, from which claim 57 depends, a temperature sensor is shown and described in a different embodiment, for example, the embodiment shown at Fig. 32.

Accordingly, applicant respectfully submits that there is no requirement for all claimed features to be shown in the same embodiment because applicant does not intend for the claims and embodiments to be strictly coextensive with any particular disclosed embodiment. It is clear from the specification that Figs. 3-6 show alternate constructions of ablating elements for the arrangement of jaws shown generally in Fig. 1. Also, paragraph 200 of the published application expressly sets forth that "[w]hile the invention has been described in terms of certain preferred embodiments, there is no intent to limit the invention to the same." (Emphasis added).

Thus, it is respectfully submitted that the claims may include a combination of features from different disclosed embodiments, as clearly contemplated by the specification. Accordingly, withdrawal of the rejection of claim 57 is respectfully requested.

INFORMATION DISCLOSURE STATEMENTS

An accompanying Information Disclosure Statement is being submitted with this amendment, which lists two of applicant's related applications, U.S. Application Serial

No. 10/920,574, filed August 18, 2004, published as Publication No. 2005/0021024, and U.S. Application Serial No. 10/927,745, filed August 27, 2004, now U.S. Patent No. 6,984,233, issued January 10, 2006. Applicant respectfully requests that the listing of references in the IDS be considered and made of record in this application and initialed copies of the listing of references be returned to the applicant.

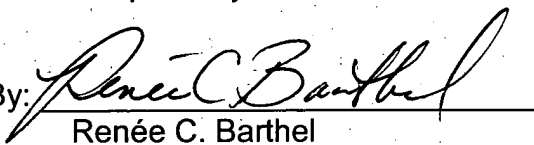
Conclusion

For all the above reasons, reconsideration or withdrawal of the rejections is respectfully requested.

Respectfully submitted,

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